

# AVO<sup>®</sup> 830 Series

## Digital TRMS Multimeter



- CAT III 1000 V and CAT IV 600 V\*
- IP54 environmental protection
- Phase rotation
- High / Low sensitivity live circuit detection
- 10 MΩ / 10 kΩ input impedance
- MIN / MAX / AVG / Smoothing

### DESCRIPTION

Megger AVO8 digital multimeters are the next generation of AVO meters designed for professional electricians, technicians, service personnel and engineers that require high reliability, build quality and performance in a compact, tough, weatherproof case.

The AVO830 and AVO835 are True RMS multimeters with up to 1000 V AC, DC and AC+DC voltage measurement range\* and current measurement from 0.1 mA to 10 A.

### FEATURES

- TRMS Voltage and current measurement
- Dual digital readout
- Classic Megger analogue arc
- 0.1% Basic accuracy
- 10 000 count resolution 4 ½ digits
- Phase sequence measurement for 3 phase circuit and motor testing
- 10 MΩ and 10 kΩ input impedance switching
- Non-contact live circuit detection with Hi/Low sensitivity
- Resistance from 0.01 Ω to 50 MΩ, conductance and Diode measurement
- Auto and manual range control
- Minimum, maximum and average measurement capture
- Measurement smoothing for fast changing quantity capture
- Hold and Auto Hold modes
- 800 Hz Low pass filter
- Capacitance and Frequency measurement
- Temperature measurement\*
- IP54 environmental protection

\* Model Dependant

## KEY FUNCTIONALITY

### CAT III and CAT IV compliance to IEC 61010\*

CAT IV surge protection provides the highest protection in the industry when used on high energy electrical installations, as well as normal mains supplies and electrical equipment.

### Measurement range

A choice of 600 V or 1000 V measurement range across AC and DC voltage supplies gives the best match to your application at the right price.

Voltage is shown as digital and analogue quantity.

### Phase sequence detection (rotation)

Detection of phase sequence identifies incorrectly wired three phase circuits, motors and generators, to make sure operation is correct and prevent damage or possible electric shock.

### Input impedance switching

Unique 10 M $\Omega$  and 10 k $\Omega$  switching, without changing test range, allows fast and safe detection of unintentionally coupled ghost voltages. High input impedance does not load the circuit under test, which prevents any significant influence on the voltage.

However, isolated circuits can exhibit a voltage that is capacitance coupled, but with no low impedance source. A low input impedance of 10 k $\Omega$  will collapse an unintentionally capacitance coupled voltage, which correctly identifies an isolated circuit.

### Non-contact live circuit detection

Non-contact detection of live circuits, cables and conductors. Dual High / Low sensitivity enables the detection of live circuits from a distance, or pinpoint an individual conductor or circuit.

Detection is provided by visual (flashing display and symbols) and an audible beep.

### High frequency interference filtering

Voltage measurements up to 5 kHz are possible. However, the selectable 800 Hz (3 db) filter prevents the interference of high frequency noise, such as those found on variable speed drive circuits.

## LIVE CIRCUIT DETECTION

Safety compliance to CAT IV 600 V (AVO830) and combined CAT III 1000 V / CAT IV 600 V (AVO835) for use on high energy, low voltage electrical applications.

### Measurement tools

A range of tools are available to help in the capture of difficult measurement quantities, including:

- Minimum and Maximum
- Average
- Hold
- Auto hold
- Smoothing of the measured quantity

## SPECIFICATIONS

### ELECTRICAL SPECIFICATIONS

|                       |   |
|-----------------------|---|
| <b>Voltage DC</b>     |   |
| Maximum range         | <b>AVO830:</b> 600 V<br><b>AVO835:</b> 1000 V |
| Maximum resolution    | 0.1 mV  |
| Accuracy**            | $\pm 0.1\% + 2 \text{ dig}$                   |
| <b>Voltage AC</b>     |   |
| Maximum range         | <b>AVO830:</b> 600 V<br><b>AVO835:</b> 1000 V |
| Maximum resolution    | 0.1 mV  |
| Accuracy**            | $\pm 1.0\% + 3 \text{ dig}$                   |
| <b>Current DC</b>     |   |
| Maximum range         | 10 A  |
| Maximum resolution    | 0.01 mA                                       |
| Accuracy**            | $\pm 1.0\% + 3 \text{ dig}$                   |
| <b>Current AC</b>     |   |
| Maximum range         | 10 A  |
| Maximum resolution    | 0.01 mA                                       |
| Accuracy**            | $\pm 1.5\% + 10 \text{ dig}$                  |
| <b>Resistance</b>     |   |
| Maximum range         | 50 M $\Omega$                                 |
| Maximum resolution    | 0.01 $\Omega$                                 |
| Accuracy**            | $\pm 1.0\% + 2 \text{ dig}$                   |
| <b>Conductance</b>    |   |
| Maximum range         | 60 nS   |
| Maximum resolution    | 0.01 nS                                       |
| Accuracy**            | $\pm 1.5\% + 10 \text{ dig}$                  |
| <b>Capacitance</b>    |   |
| Maximum range         | 20 mF   |
| Maximum resolution    | 1 nF  |
| Accuracy**            | $\pm 2\% + 2 \text{ dig}$                     |
| <b>Diode</b>          |   |
| Maximum range         | 2.8 V   |
| Maximum resolution    | 0.001 V                                       |
| Accuracy**            | $\pm 1.0\% + 2 \text{ dig}$                   |
| <b>Temperature</b>    |   |
| Range                 | -20 °C / 300 °C<br>(-4 °F / 572 °F)           |
| Maximum resolution    | 0.1 °C/°F                                     |
| Accuracy**            | $\pm 1.0^\circ\text{C} + 20 \text{ dig}$      |
| <b>Phase rotation</b> |   |
| Operating voltage     | 90 Vac to 440 Vac                             |
| Operating frequency   | 50 Hz / 60 Hz nominal                         |

\* Model Dependant

\*\* Accuracies are best accuracies for each function

## ENVIRONMENTAL SPECIFICATIONS

|                                    |                                     |
|------------------------------------|-------------------------------------|
| Operating temperature              | -10 °C / 50 °C<br>(14 °F / 122 °F)  |
| Storage temperature                | -30 °C / 70 °C<br>(-22 °F / 158 °F) |
| Humidity<br>(without condensation) | 90% at 40 °C (104 °F)               |
| Altitude                           | ≤ 2000 m (6562 ft)                  |
| IP Rating                          | IP54                                |

## SAFETY SPECIFICATIONS

|                       |   |
|-----------------------|---|
| Over-voltage category | <b>AVO830:</b> EN 61010-1<br>600 V CAT IV<br><b>AVO835:</b> EN 61010-1<br>1000 V CAT III / 600 V CAT IV |
|-----------------------|---|

## MECHANICAL AND GENERAL SPECIFICATIONS

|              |  |
|--------------|--|
| Size         | 45 x 95 x 195 mm<br>(1.8 x 3.7 x 7.7 in)   |
| Weight       | 420 g (0.915 lb)   |
| Warranty     | 1 year (extendable to 3 years<br>free when registered on the<br>Megger web site) |
| Battery life | 2 x AA Alkaline:<br>150 hours typical,<br>without back-light                     |

## ORDERING INFORMATION

| Description                                       | Order Code | Description                       | Order Code |
|---|------------|-----------------------------------|------------|
| AVO830  | 1007-494   | <b>Optional Accessories</b>       |            |
| AVO835  | 1008-221   | UKAS calibration certificate      |            |
| <b>Included Items</b>                             |            | Test lead set and crocodile clips | 1002-001   |
| Red/Black Silicone test leads with Probes + Clips |            | 2 wire 500 mA fused test lead set | 1002-015   |
| Owners information CD                             |            | Magnetic strap                    | 1010-013   |
| Batteries 2 x AA Alkaline                         |            |                                   |            |
| Thermocouple Type K (AVO835)                      |            |                                   |            |

### SALES OFFICE

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### AVO830--AVO835\_DS\_en\_V0

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ISO 9001  
The word 'Megger' is a registered trademark

**Megger**<sup>®</sup>